



ABSTRACT

The New Home Cooling Cycle

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The heart of the "New Home Cooling Cycle" is a concrete heat exchanger located under the home. The heat exchanger is constructed of concrete and PVC piping. There are two flow passes. Each is ninety degrees from the other. On a hot sunny day, heat absorbed by air inside the home is routed through one pass of the heat exchanger where the heat is removed by absorption into the concrete, thus removing heat from the home. Air is circulated using a small electric blower. Air leaving the heat exchanger is cool and is returned to the home ready to absorb heat again. The recycled air absorbs additional heat and the cycle is repeated through the heat exchanger. Regeneration of the heat exchanger is accomplished at night. Cool night air is blown, using a small electric blower, through the heat exchanger second pass, ninety degrees to the absorbing pass. This cooling air absorbs heat from the heat exchanger and exhausts it back to the night air. The two heat exchanger passes are totally isolated to prevent moisture from entering the house circuit.

This same cycle is used during winter. On a sunny winter day, solar heat and heat from a wood burning fireplace is absorbed by air inside the home and is routed through the heat exchanger as in the summer cooling cycle. Heat is removed and stored in the heat exchanger and cooled air is returned to the home where the cycle repeats. At night, heat stored in the heat exchanger is routed into the home. During winter, there is no regeneration required for the heat exchanger.

Usage of refrigerated air conditioning is radically reduced. In some United States climates, it may be possible to eliminate refrigerated air conditioning.